UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,119	02/01/2002	Brian Seed	00786/371002	9499

21559 7590 07/29/2003

CLARK & ELBING LLP
101 FEDERAL STREET
BOSTON, MA 02110

EXAMINER	
WESSENDORF, TERESA D	
ART UNIT	PAPER NUMBER
1639	

DATE MAILED: 07/29/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/914,119	SEED ET AL.	
	Examiner	Art Unit	
	T. D. Wessendorf	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 March 0620* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) *5,6,17,18 and 24-44* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 7-16, 19-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *12* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Applicant's election of Group I, claims 1-4, 7-16 and 19-23 with in Paper No. 13 and species, signal transduction intermediates, as the polypeptide; Bcl-XL as the anti-cell death gene and 293 cell in Paper No. 16 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 5-6, 17-18 and 24-44 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper Nos. 13 and 16.

Status of Claims

Claims 1-44 are pending in the application.

Claims 5-6, 17-18 and 24-44 are withdrawn from consideration as stated above.

Claims 1-4, 7-16, 19-23 are under examination.

Specification

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors (typographical, grammatical and idiomatic). Applicant's

cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4, 7-16, 19-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A). Claims 1 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the step by which increase or decrease in reporter gene is determined and the polypeptide identified. The preamble recites that the polypeptide increases gene expression from a promoter which is being inconsistent with the body of the claim. The body of the claim recites increased in reporter gene. It is unclear as to whether the measured increase or decrease expression relates to the promoter or reporter gene. There is no antecedent basis of support for said promoter from the preceding step. The conditional limitation

"if" renders the claim indefinite as to the positive step of determining any increase or decrease.

B). Claims 2 and 4 are indefinite as to the basis of dividing the library into two or more libraries. The term "more" and "less" in claim 2 and claim 4 are relative terms which render the claim indefinite. The terms "more" and "less" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear as to what constitute a library of "less complexity", within the context of the claim. Claim 2 which recites "activates" is inconsistent with the base claim which recites increase.

C). Claims 7-16, in the alternative, depend on non-elected claim 5.

D). Claim 7 is confusing and broadens the base claim with the recitation of "expressing a DNA molecule in a cell". The base claim does not recite an expressed encoding DNA or the cell in which DNA is expressed. It is suggested that this claim be incorporated to claim 1.

E). Claim 13 is indefinite as to the metes and bounds of the "high efficiency system". It is not clear as to the

components of a high efficiency system or what would be considered a high efficient system. "High" is a relative term.

F). Claim 15 is unclear as to the metes and bounds encompassed by the "other" cell that produced a polypeptide. It is not clear how the cell produce a polypeptide. Cf. with claim 7.

G). Claim 16 is indefinite as to the term "intermediate", within the context of the claim.

H). Claims 19-23 depend on the non-elected claims 5 or 17.

Claim 20 is indefinite as to what constitutes a "derived" promoter from a mammal or a polypeptide from a bacterium or a virus.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 7-16 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korsmeyer (U.S. 5,834,209) in view of Kamb (WO 98/36097).

Korsmeyer discloses a method, Yeast two-hybrid systems, which is used to screen a mammalian cDNA expression library, wherein cDNA is fused to a GAL4 DNA binding domain or activator domain, and either a Bax or Bcl-2 polypeptide sequence is fused to a GAL4 activator domain or DNA binding domain, respectively. Such a yeast two-hybrid system can screen for cDNAs that encode proteins, which bind to Bax, or Bcl-2 sequences. For example, a cDNA library can be produced from mRNA from a human mature B cell line or other suitable cell type. Such a cDNA library cloned in a yeast two-hybrid expression system can be used to identify cDNAs which encode proteins that interact with Bax or Bcl02 and thereby produce expression of the GAL4-dependent reporter gene. Polypeptides which interact with Bax or Bcl-2 can also be identified by immunoprecipitation of Bax or Bcl-2 with antibody and identification of co-precipitating species. Furthermore, polypeptides that bind Bax or Bcl-2 can be identified by screening a peptide library (e.g., a bacteriophage peptide display library, a spatially defined VLSIPS peptide array, and the like) with a Bax or Bcl-2 polypeptide. Assays for detecting the ability of agents to inhibit or augment the binding of Bad to bcl-2 or bcl-XL provide for facile high-throughput screening of agent banks (e.g., compound libraries, peptide libraries, and the like) to identify Bad or

bcl-2 antagonists or agonists. Such Bad or bcl-2 or antagonists and agonists may modulate Bad and/or bcl-2 and/or Bax activity and thereby modulate apoptosis. In one variation, the binding assay is performed in vivo in a cell, such as a yeast cell (e.g., Saccharomyces), and agents which inhibit intermolecular binding between a Bad protein and a bcl-2 polypeptide are identified as Bad-modulating agents. Frequently, the in vivo screening assay is a yeast two-hybrid system wherein the yeast cells express: (1) a first fusion protein comprising Bad and a first transcriptional regulatory protein sequence (e.g., GAL4 activation domain), (2) a second fusion protein comprising a bcl-2 polypeptide and a second transcriptional regulatory protein sequence (e.g., GAL4 DNA-binding domain), and (3) a reporter gene (e.g., .beta.-galactosidase, an auxotroph complementing gene) which is transcribed when an intermolecular complex comprising the first fusion protein and the second fusion protein is formed. If a functional bcl-2:Bad polypeptide complex forms, such as in a control assay lacking agent, the cell expresses the reporter gene which can be detected. Agents which inhibit or augment formation of functional bcl-2:Bad polypeptide complexes (and thus reporter gene expression) are thereby identified as Bad-modulating agents. Korsmeyer does not disclose GFP as the reporter gene. However, Kamb discloses at

page 14, lines 3-9 GFP as a reporter gene. Kamb further discloses that GFP are of greatest use in monitoring living cells, because they act as "vital dyes". Their expression can be evaluated in living cells and the cells can be recovered intact for subsequent analysis. It is also very useful to employ reporters whose expression can be quantified rapidly and with high sensitivity. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use reporter gene, GFP, in the method of Korsmeyer as taught by Kamb. The numerous advantages derived in the use of GFP in a method of monitoring cell death as taught by Kamb provides a motivation to one having ordinary skill in the art.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to T. D. Wessendorf whose telephone number is (703) 308-3967. The examiner can normally be reached on Flexitime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on (703) 306-3217. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7924 for regular communications and (703) 308-7924 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

T. D. Wessendorf
Primary Examiner
Art Unit 1639

tdw
July 25, 2003